

Work Order ID 48221

June 26, 2009 11:11:34 AM



Page 1

Item ID: D350-748-201

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

N/A

Rev D

100

0.00



DOCUMENT CONTROL

DC

Memo

Photocopy bluefile & type labels per PPPD350-748-201

CHG001

Document Control

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT

120

0.00



QC15- Crosstube Dimensional Check

QC

Memo

0.00

Quality Control

QC15- Crosstube

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Page 3

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Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure certificate of conformity is attached

169/7/28 1

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

*7 8 09/07/30**81 8*

180

SprayPaint

0.00



SprayPaint

Memo

0.00

Spray Painting

1-Prime inside crosstube as per QSI 005 4.2; 2-Paint Outside of Tube as per
Dart QSI 005 4.2*ml 09 08 07 1*

Work Order ID 48221

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Item ID: D350-748-201

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC14- Inspect Spray Paint

0.00

→ R 09-08-11



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

200

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Install Ground wire Insert, then insert screw and washer! 2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.1 3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

⇒

MM 09 08 11 ①

210

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

⇒ 8 09/08/12

④

φ

Work Order ID 48221

June 26, 2009 11:11:34 AM



Page 5

Item ID: D350-748-201

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

(P10) →

220

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

9/8/13 @ 50

230

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

278 09/08/13

(X/D) P

240

Packaging

0.00



Packaging

Memo

0.00

Packaging



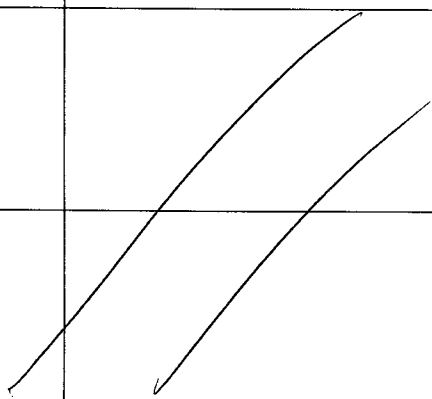




Identify and pack for shipping as per PPP D350-748-201 Location: _____ (PPP Rev: A)

50

1 MMD 09/08/13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-201 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: LA Date: 09-08-20
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: <u>48221</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
9/8/13	# 220	missing parts on pick list R.C. not correctly adjusted from COSC to intuitive		ADD missing test parts ✓ AN4-41A bolts qty x8 B# <u>M110363</u>	MD 09/08/13	S 09/08/13		S 09/08/13
				✓ D3500-1 SADDLES qty x4 B# <u>1646594</u>	SP 9/8/13	S 09/08/13		S 09/08/13
				ADJUST BOM to prevent from require happening AGAIN ADD copy of BOM for Ref.	AS 09/08/13	S 09/08/13		S 09/08/13

NOTE: Date & initial all entries

Work Order ID 48221

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Item ID: D350-748-201

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Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/08/19 *[Signature]*

MF 09-08-19

Picklist Print

June 26, 2009 11:11:34 AM

Page 1

Work Order ID: 48221

Parent Item: D350-748-201RevD

Parent Item Name: Crosstube Installation, High Aft

Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ MS21042L5 <i>+4</i>		Purchased	No			220 226	Each	0.0000	4.0000			
Nut												
✓ ALS4-1032-225		Purchased	No			200	Each	0.0000	1.0000			
Insert												
✓ AN960JD10		Purchased	No			200	Each	0.0000	1.0000			
Washer												
✓ D2856-400RevA		Manufactured	No			200	f	0.0000	1.2432			
Abrasion Strip												
✓ D350-748-241TRNRevD		Manufactured	No			200	Each	0.0000	1.0000			
Crosstube Turning Detail												
✓ MS21920-20		Purchased	No			200	Each	0.0000	2.0000			
Clamp (per MIL-DTL-8783C)												
✓ MS27039-1-10		Purchased	No			200	Each	0.0000	1.0000			
Screw												
✓ AN4-6A <i>N6</i>		Purchased	No			230 220	Each	0.0000	16.0000			
Bolt												
✓ AN5-32A <i>X4</i>		Purchased	No			230 220	Each	0.0000	4.0000			
Bolt												

M111127 MD 09/08/13

B110768 M 09 08 11

B111668 M 09 08 11

B 42437 M 09 08 11

48221 MD 09/08/13

B110536 M 09 08 11

B111425 M 09 08 11

M111279 MD 09/08/13

M111916 MD 09/08/13

Picklist Print

Page 2

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Work Order ID: 48221

Parent Item: D350-748-201RevD

Parent Item Name: Crosstube Installation, High Aft






Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ AN960JD416 	x32	Purchased	No			230	Each	0.0000	32.0000			
Washer											11/9/10	MD 09/08/13
✓ AN960JD516 	76	Purchased	No			230	Each	0.0000	8.0000			
Washer											m 112082	MD 09/08/13
✓ D3501-1RevA 	x16	Manufactured	No			230	Each	0.0000	16.0000			
Bushing											B45402	MD 09/08/13
✓ D3502-1RevB 		Manufactured	No			230	Each	0.0000	2.0000			
Support											B47120	MD 09/08/11
✓ MS21042L4 	x21	Purchased	No			230	Each	0.0000	24.0000			
Nut											M110507	9/8/13

✓ D3500-1

B 46594
54

June 26, 2009 11:11:34 AM

Shop Packet Print

Page 2

Date: Wednesday, 27/05/2009 12:54:09 PM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 350/355 AS X-TUBE AFT
Job Number : 48221	
Estimate Number : 12486	
P.O. Number :	Part Number : D350748201
This Issue : 27/05/2009 S.O. No. :	Drawing Number : N/A
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : CROSSTUBES	Drawing Revision : D
Previous Run : 48220	Material :
Written By :	Due Date : 17/06/2009 Qty: 1 Um: Each
Checked & Approved By : <u>JLD 09.05.27</u>	
Comment : Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update qty of MS21042L5 06-09-12 KJ Est Rev C Combined manufacturing 08.04.02 EC verified by: DD Est Rev:D 08-06-24 revD as per dwg DD verified by:EC Est Rev: E 08.12.11 Step17 was step 21 KJ Verified by:	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0

✓ DC

DOCUMENT CONTROL



Comment: Photocopy bluefile & type labels per PPPD350-748-201 CHG001

2.0

✓ D350748241TRN

Crosstube Turning Detail



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

✓ CROSSTUBE TURNING DETAIL
 batch B-47168

MP 09-06-12

3.0

BENDING

BENDING MACHINE - SKIDTUBES



Comment: BENDING MACHINE

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT MP 09-06-12 ①

4.0

✓ QC15

DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

0506.15 ①

5.0

✓ CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs,
 Set-up drill table as per QSI 010

2-Deburr

MP
 09-06-15 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 27/05/2009 12:54:09 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 48221

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description:

3-Engrave Part # and Batch # as per Dwg D350-748-241

> mb 09-06-15 (1)

4-Remove all marks from tube within limits of D350-748-241

- AWM 7-6-17 (1)

5- Apply a light coat of LPS3 on the interior of tube

Batch:

17109956

AWM 9-6-17 (1)

6.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

8-09-16-17 (1)

7.0

OUTSIDE SERV.10

OUTSIDE SERVICES -skids



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: _____

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8-09-10-17 (1)

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

2-Paint Outside of Tube as per Dart QSI 005 4.2

> ml 09-08-07 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 27/05/2009 12:54:09 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 48221

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

✓ QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

12.0

✓ D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: 42437

mtl 09 08 11

13.0

✓ ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert 11067

Batch: 4049207

mtl 09 08 11

14.0

✓ AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: 111668

mtl 09 08 11

15.0

✓ MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: 110536

mtl 09 08 11

16.0

✓ MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Screw

Batch: 111425

mtl 09 08 11

17.0

✓ D35021

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

SUPPORT

Batch: 47120

mtl 09 08 11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 27/05/2009 12:54:09 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 48221

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0



CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert, then insert screw and washer

2-Install Abraison strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

ml 09 08 11 (1)

19.0



QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8056010 (x6)

20.0



PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

21.0



D35001

Saddle



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
350 SADDLE

Batch: _____

22.0



D35011

Bushing



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)
BUSHING

Batch: _____

23.0



AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Bolt

Batch: _____

24.0



AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

bolt

Batch: _____

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 27/05/2009 12:54:09 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 48221

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

✓ AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: _____

26.0

✓ AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s)

Washer

Batch: _____

27.0

✓ AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: _____

28.0

✓ MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

Nut

Batch: _____

29.0

✓ MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: _____

30.0

✓ QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

31.0

✓ PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-201

Location: _____

PPP Rev: _____

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 27/05/2009 12:54:09 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 48221

Part Number: D350748201

- Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0



QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

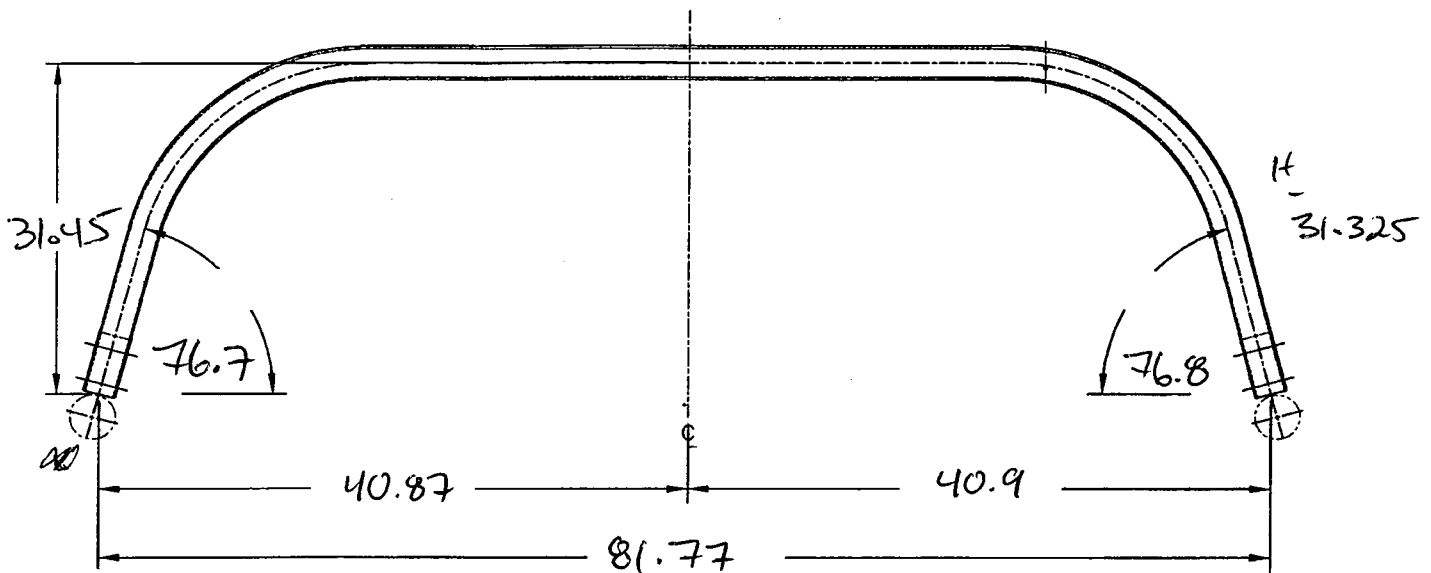
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	48221
Description: Crosstube High Aft (AS350/355)		Part Number:	D350-748-201
Inspection Dwg: D350-748-241 Rev: D		Page 1 of 1	

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06



Comments
Tube is 0.300 least max from cuff to cuff

QC15 Inspection	<i>[Signature]</i>
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>qp</i>	DRAWN BY <i>qp</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>///</i>	APPROVED <i>///</i>	DRAWING NO. D350-748-241	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT) NTS	
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6018-125 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

RELEASED

06.10.31 *///*

QTY	P/N	DESCRIPTION
X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
1	D6018-125	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

D350-748-141 CROSSTUBE:

- MATERIAL: MANUFACTURED FROM D6018-125 OR D6015-125
FINISHED LENGTH = 122.70±0.06
- MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
- FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE IN INCHES
- PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.

UNDER REVIEW

09.02.05
PER PCR #09-001

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WORK ORDER
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UNDER REVIEW

07.02.16
07.02.22

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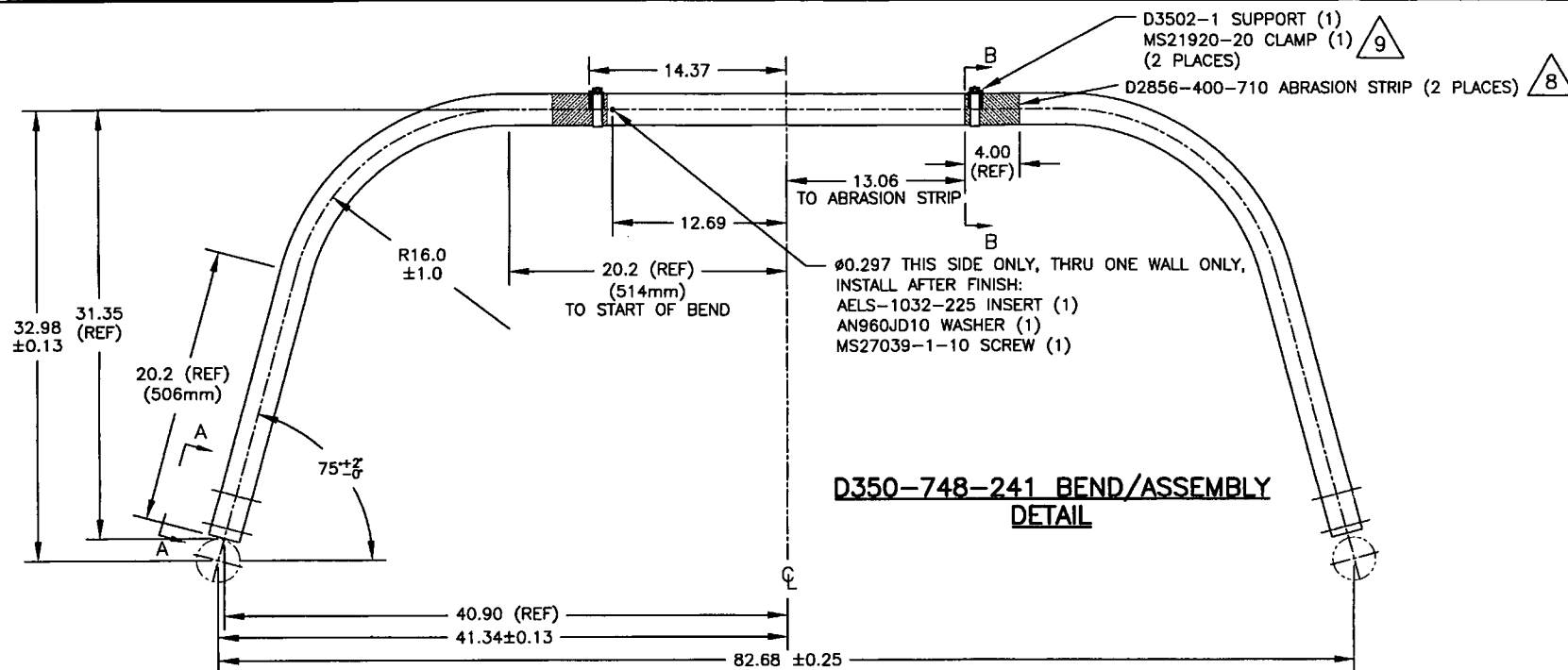
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

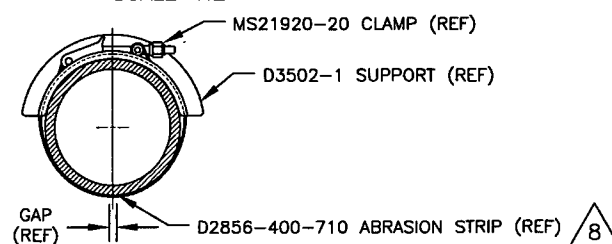
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D350-748-241 BEND/ASSEMBLY DETAIL

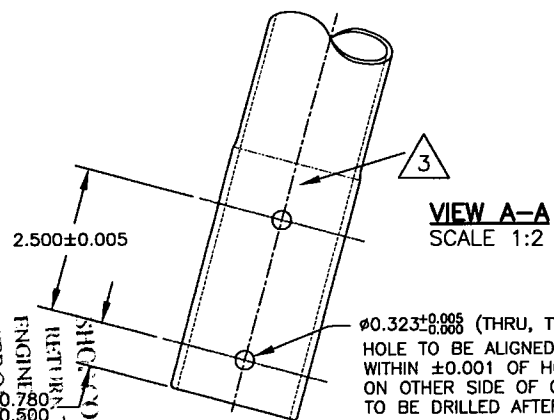
SECTION B-B SCALE 1:2



UNDER REVIEW
09.02.05

UNDER REVIEW
07.02.06
OK 12.10.22

RELEASED
06.10.31



VIEW A-A SCALE 1:2

Ø0.323^{+0.005}_{-0.005} (THRU, TYP)
HOLE TO BE ALIGNED
WITHIN ±0.001 OF HOLE
ON OTHER SIDE OF CUFF,
TO BE DRILLED AFTER BENDING

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DESIGN	q	DRAWN BY	q	DART	DART AEROSPACE LTD. HAMPSHIRE, OXFORD, CANADA
CHECKED	#	APPROVED	#	DRAWING NO.	REV. D
DATE	06.10.31	TITLE	CROSSTUBE (AS 350/355 HI AFT)	D350-748-241	SHEET 2 OF 3
		SCALE	1:8		

NO 18221
WORK ORDER
SUBJECT TO AMENDMENT
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ENGINEERING
RETURN TO
SHOCK COPY
7800

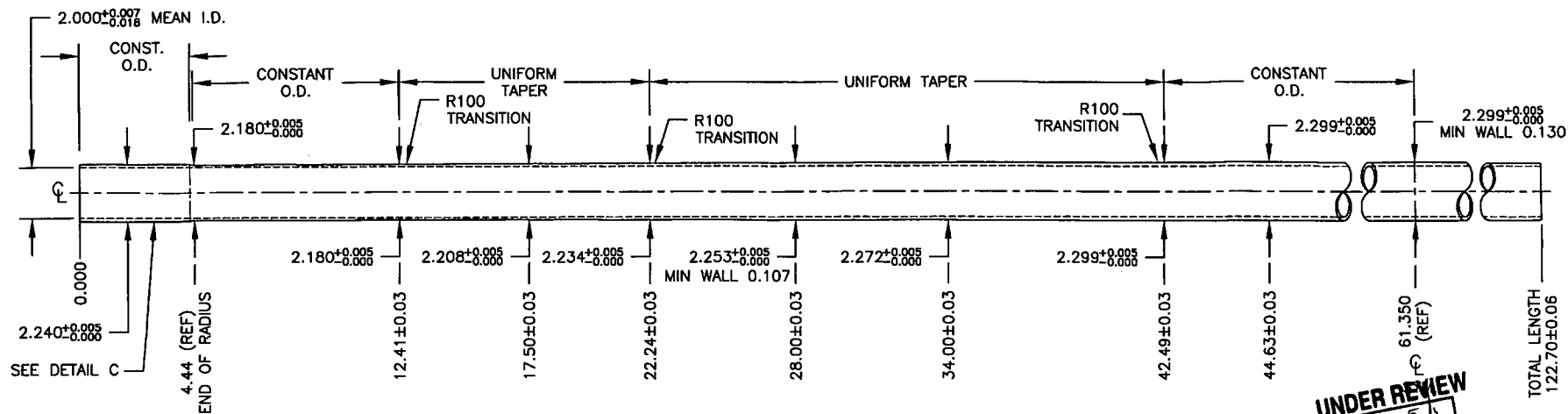
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

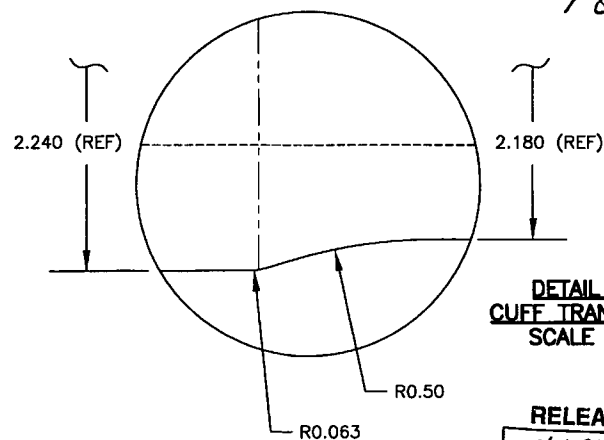
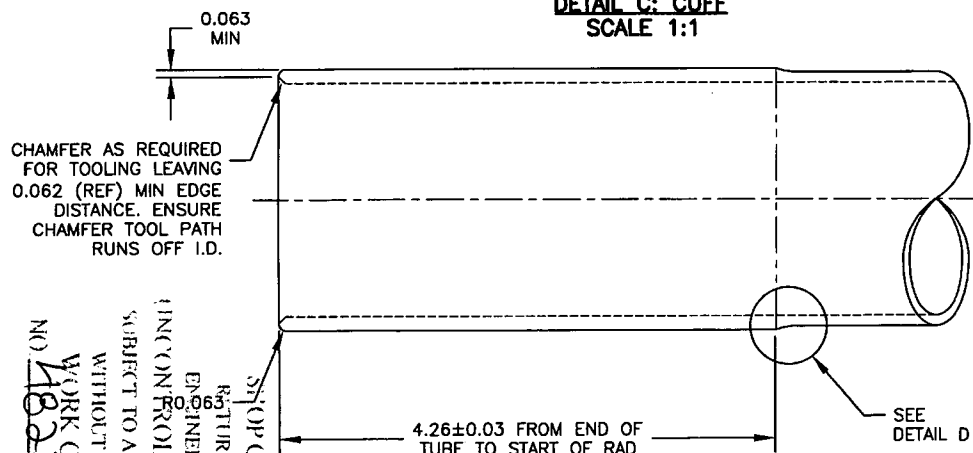
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D350-748-241 MACHINING DETAIL

DETAIL C: CUFF SCALE 1:1



DETAIL D: CUFF TRANSITION SCALE 9:1

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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED #	APPROVED #	DRAWING NO. D350-748-241	REV. D SHEET 3 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT)			SCALE 1:4

Packing Slip



Cadorath Plating Co. Ltd.

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

INVOICE NUMBER:

45402

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Sold To: Dart Aerospace Ltd. 1270 Aberdeen St. Hawksbury, ON K6A 1K7
ShipTo:

Customer Order #:	Date Received:	Terms:	G.S.T. #:	Ship Via:	Ship Date:
10020	Jul-14-2009	NET 30 DAYS	10071 6547 RT0001		Jul-24-2009

Item # Qty P/N & Description

1	1 EA SKID	S/N B48222
	P/N D350-748-201	W/O 88057
2	1 EA SKID	S/N B48221
	P/N D350-748-201	W/O 88058
3	1 EA SKID	S/N B48220
	P/N D350-748-201	W/O 88059
4	1 EA SKID	S/N B48223
	P/N D350-748-201	W/O 88060

extra 1/29

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jul-24-2009

**CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St
Hawksbury, ON K6A 1K7**

W/O #: 88058

INVOICE #: 45402

**CONTRACT OR
PURCHASE ORDER # 10020**

DESCRIPTION: SKID

QTY 1

P/N # D350-748-201

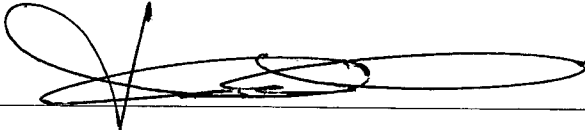

S/N # B48221

**STRESS RELIEFE. MPI IAW ASTM-E-1444. CADMIUM PLATE IAW
AMS-QQ-P-416B TYPE 2 YELLOW CLASS 2. BAKE HEAT CHARTS #
10651 AND 10700.**

*23/7/09
S*

**CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.**

Approved Inspector:

5.0 PARTS LIST

Qty -101	Qty -201	Part Number	Description
X		D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X	D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
1		D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1	D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
*2	*2	D3502-1	SUPPORT
*2	*2	D2856-400-710	ABRASION STRIP
*1	*1	AELS-1032-225	INSERT
*2	*2	MS21920-20	CLAMP
*1	*1	MS27039-1-10	SCREW
*1	*1	AN960JD10	WASHER
4	4	D3500-1	SADDLE ←
16	16	D3501-1	BUSHING
16	16	AN4-6A	BOLT
8	8	AN4-41A	BOLT ←
4	4	AN5-32A	BOLT
32	32	AN960JD416	WASHER
8	8	AN960JD516	WASHER
24	24	MS21042L4	NUT (OR MS21042-4)
4	4	MS21042L5	NUT (OR MS21042-5)

* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/241 ASSEMBLIES ABOVE

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Revision: **B**

Date: 07.06.15

Status	Item ID	Rev	Name	Start Date	Quantity Per	UOM	Scrap %	Route Seq ID	Sort	Date Last Mod	Add Date	Comments
✓	D350-748-241TRN	D	Crosstube Turning Detail	01/01/08	1.0000	Each	0 %	110	0	06/05/09 2:40...	06/05/09	
✓	ALS4-1032-225		Insert	01/01/08	1.0000	Each	0 %	200	0	06/05/09 2:40...	06/05/09	
✓	MS21920-20		Clamp (per MIL-DTL-87...	01/01/08	2.0000	Each	0 %	200	0	06/05/09 2:40...	06/05/09	
✓	D2856-400	A	Abraison Strip	01/01/08	1.1810	f	5 %	200	0	06/05/09 2:40...	06/05/09	
✓	D3502-1	B	Support	01/01/08	2.0000	Each	0 %	200	0	06/05/09 2:40...	06/05/09	
✓	MS27039-1-10		Screw	01/01/08	1.0000	Each	0 %	200	0	06/05/09 2:40...	06/05/09	
✓	AN960JD10		Washer	01/01/08	1.0000	Each	0 %	200	0	06/05/09 2:40...	06/05/09	
✓	AN4-6A		Bolt	01/01/08	16.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	AN5-32A		Bolt	01/01/08	4.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	AN960JD416		Washer	01/01/08	32.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	AN960JD516		Washer	01/01/08	8.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	D3501-1	A	Bushing	01/01/08	16.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	MS21042L5		Nut	01/01/08	4.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	MS21042L4		Nut	01/01/08	24.0000	Each	0 %	220	0	06/05/09 2:40...	06/05/09	
✓	D3500-1	C	Saddle	08/13/09	4.0000	Each	0 %	220	0		08/13/09	
✓	AN4-41A		Bolt	08/13/09	8.0000	Each	0 %	220	0		08/13/09	